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Work Plan

Pre-Development Soil Characterization

South Tacoma Field Site
South 56th Street and South Burlington Way
Tacoma, Washington

Former South Tacoma Field Soil Operable Unit
South Tacoma Field NPL Site

Prepared For:

Bridge Development Partners, LLC
10655 NE 4th Street, Suite 500
Bellevue, Washington 98004

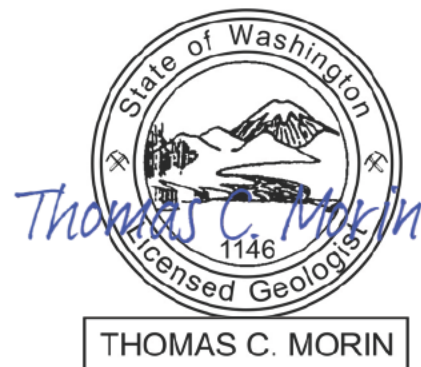
April 19, 2021

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ATTACHMENTS

Attachment A	Health and Safety Plan
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ABBREVIATIONS AND ACRONYMS

Acronym/

Abbreviation

Definition

BNSF	Burlington Northern Santa Fe
COC	Contaminant of concern
cPAHs	Carcinogenic polycyclic aromatic hydrocarbons
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
mg/kg	Milligrams per kilogram
NPL	National Priorities List
PCBs	Polychlorinated biphenyls
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SDIC	Site Development and Institutional Controls Plan for Properties Under a Restrictive Covenant
SOU	Soil Operable Unit
TRC	TRC Environmental Corporation
UST	Underground storage tank

1.0 INTRODUCTION

On behalf of Bridge Development Partners, LLC (Bridge), TRC Environmental Corporation (TRC) has prepared this *Work Plan – Pre-Development Soil Characterization* (Work Plan) for a portion of the South Tacoma Field Soil Operable Unit 3 of the of the South Tacoma Field Commencement Bay South Tacoma Channel National Priorities List (NPL) Site (Site). The Site is generally located at South 56th Street and South Burlington Way, Tacoma, as indicated on Figure 1.

Bridge is currently evaluating the potential purchase of approximately 150 acres of the approximately 260-acre Site. The portion of the Site that may be purchased by Bridge is indicated on Figure 2.

The Site has undergone a full Remedial Investigation / Feasibility Study (RI/FS) and completion of remedial actions under a Record of Decision (ROD) with U.S. Environmental Protection Agency Region 10 (EPA), which was completed in 2002. As a result of the remedial actions and subsequent post-closure groundwater monitoring, the Soil Operable Unit (SOU) has been de-listed from the NPL.

As a component of the remedial actions, approximately 93,000 cubic yards of contaminated soil and 6,300 cubic yards of contaminated and treated soil were encapsulated in an approximately 12-acre portion of the northern portion of the Site. Development of the Site will require that the encapsulated soils are partially excavated and relocated to allow for appropriate final site grades. In support of this potential excavation and contaminated soil relocation, Bridge is proposing sampling of those soils.

1.1 Notification to EPA

This Work Plan has been prepared in consideration of the requirements of the Environmental Covenant that was placed on the properties as described in the *Site Development and Institutional Controls Plan for Properties Under a Restrictive Covenant* (SDIC), prepared by Kennedy Jenks, dated June 2, 2020. Section 3.1.1 of that document requires that advanced written notification is given to EPA prior to access to areas defined within the restrictive covenants, consistent with Section XXIV of the 1996 Consent Decree.

It is Bridge's intent to comply with all appropriate rules and regulations and to comply with the conditions of the SDIC during redevelopment. This Work Plan uses the SDIC as the basis for following the appropriate notifications to EPA prior to performing any on-Site work.

The information generated from implementation of this Work Plan will be shared with EPA and used in the development of a detailed Media Management Plan (MMP) or similar document to be implemented during redevelopment. Prior to any redevelopment activities, Bridge will seek a "Comfort Letter" (or similar opinion or documentation) from EPA that the MMP is consistent with the ROD, the Environmental Covenant, and any Operations and Maintenance Plans for the Site and that implementation of the MMP and redevelopment will not affect the current regulatory status of the Site.

1.2 Work Plan Organization

This Work Plan is organized into the following sections:

- **Section 1.0 – Introduction:** Provides the purpose of the work plan and provides the organization of the document.
- **Section 2.0 – Site Background:** Provides a brief description of planned redevelopment of the Site, known environmental conditions and utilities serving the Site.
- **Section 3.0 – Previous Environmental Assessments:** Provides a list of the documents prepared and submitted to EPA as part of the site closure and ongoing monitoring requirements for the Site.
- **Section 4.0 – Physical Setting and Known Subsurface Conditions:** Provides summaries of the topography, soil types, and general soil conditions in the general vicinity of the areas to be investigated.
- **Section 5.0 – Contaminants of Concern:** Provides a summary of known contaminants of concern in the locations to be investigated.
- **Section 6.0 – Soil Sampling and Analysis:** Describes the methodologies used, rationale for soil sample collection depths, chain-of-custody protocols and the laboratory analyses to be conducted.
- **Section 7.0 – Reporting:** Provides a general description of how the findings from the work described herein will be documented.
- **Section 8.0 – Schedule:** Provides a schedule for beginning the work, depending on authorization and Site preparation.

2.0 SITE BACKGROUND

The Site was generally described as being comprised of the Burlington Northern Railroad (BNR) Railyard (RY), BNR Dismantling Yard (DY), Airport, Former Swamp/Lakebed, and the Amsted Property. It must be noted that the Amsted Property is not a portion of the Site to be purchased by Bridge.

The Site was generally used by Burlington Northern starting in about the early 1890s through as late as 1980 for manufacturing, repair, and dismantling of railcars with some on-Site smelting, which was restricted to the Amsted Property. The Site was impacted primarily with elevated concentrations of lead, which was the primary regulatory driver for remediation. Other contaminants of concern detected at concentrations greater than action levels identified in the ROD included arsenic, copper, zinc, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and polychlorinated biphenyls (PCBs).

The Site was placed on the NPL and underwent the RI/FS and cleanup process under a ROD with EPA. SOU 3, which is the subject of Bridge's potential purchase, was removed from the NPL and is currently undergoing limited post-closure monitoring.

The remedial action included excavation and encapsulation of about 107,000 cubic yards of contaminated soil excavation and treatment, and encapsulation of an additional 6,300 cubic yards of soil. Approximately 93,000 cubic yards of contaminated soil, all 6,300 cubic yards of treated soil, and about 15,000 cubic yards of crushed concrete are encapsulated on the northern portion of the Site that may be purchased by Bridge. The location of the encapsulated material is indicated on Figure 2.

Soil with lead concentrations greater than 18,000 milligrams per kilogram (mg/kg) was designated for treatment and soil with lead concentrations between 1,000 mg/kg and 18,000 mg/kg was designated for encapsulation. The encapsulated material was placed on native soil and covered with a 1-foot soil cap, hydroseeded, and fenced.

Other portions of the Site with lead and other contaminants at concentrations exceeding a residential cleanup level were allowed to remain in place. The *Remedial Action Report* (RA Report) for the Site, dated March 2000 by Kennedy/Jenks Consultants, documents the post-remediation conditions at the Site.

As noted above, Bridge is evaluating a potential purchase of about 150 acres of the Site. The portion subject to the potential purchase includes the approximately 12-acre area on the northern portion of the property containing approximately 92,000 cubic yards of encapsulated soil and 6,300 cubic yards of treated and encapsulated soil. Figure 2 presents the current development plan with locations of buildings and shows that the footprint of one of the proposed buildings is partially located on the encapsulated area. The grades in this area will require adjustment for development and some amount of encapsulated material will be encountered.

It is important to note that the final development will result in substantially all of the redeveloped portion covered with either buildings or asphalt covered parking. That level of development will cap the entire redeveloped area with impervious surfaces. The asphalt, concrete, and buildings will be substantially superior to the current unlined and soil covered encapsulated area.

The purpose of the scope of investigation in this Work Plan is to assess the contaminant concentrations within the encapsulated material that may be encountered during redevelopment, to provide the data necessary to properly plan the relocation of those soils, and to protect the health and safety of on-Site workers during that action. There is no component of the anticipated redevelopment that can reasonably be considered to worsen the current environmental conditions on the Site. To the contrary, the redevelopment will only improve environmental conditions and substantially reduce the potential for human health or environmental exposures to the residual contamination remaining on the Site.

3.0 PREVIOUS ENVIRONMENTAL ASSESSMENTS

The Site has undergone investigation and remediation under a ROD with EPA. Substantial documentation exists for this prior work. Historical reports for the Site include, but are not limited to the following:

- Record of Decision, Commencement Bay South Tacoma Channel, South Tacoma Field Operable Unit, dated 1994, by EPA.
- South Tacoma Field Consent Decree, dated 1996, by EPA.
- *Remedial Investigation Report*, Volumes 1 through 6, dated February 1993, by Kennedy/Jenks Consultants.
- *Feasibility Study Report*, dated April 1994, by Kennedy/Jenks Consultants.
- *Final Remedial Design Report*, dated February 1998, by Kennedy/Jenks Consultants.
- *Remedial Action Work Plan*, dated April 1998, by Kennedy/Jenks Consultants.
- *Remedial Action Management Plan for Site Remediation*, dated June 24, 1998, by RCI Environmental Inc.
- *Operation and Maintenance Plan*, dated March 2000 by Kennedy/Jenks Consultants.
- *Site Development and Institutional Controls Plan* (draft), dated March 2000, by Kennedy/Jenks Consultants.
- *Remedial Action Report*, dated March 2000, by Kennedy/Jenks Consultants.
- *Site Development and Institutional Controls Plan for Properties under a Restrictive Covenant, South Tacoma Field*, periodically updated through June 2, 2020, by Kennedy/Jenks Consultants.

The reviewer is directed to the source documents for additional detail regarding Site conditions.

4.0 PHYSICAL SETTING AND KNOWN SUBSURFACE CONDITIONS

4.1 Topography and Drainage

The Site generally slopes from north to south at about 1 percent or less and slopes from east to west at between about 1 percent and 3 percent or more in some areas. Localized berms and depressions exist. The Site is generally bare or vegetated soil with precipitation generally infiltrating with some localized short-term ponding. There are no indications of sheet flow.

There is surface water drainage on the far western periphery of the Site consisting of surface water drainage from the City of Tacoma within a jurisdictional wetland. The far southwestern portion of the Site contains localized standing water associated with the historical swamp/lakebed.

4.2 Regional Geology

The Site is in the southern portion of the Puget Sound Lowlands region, which is a broad glacial drift plain dissected by a network of multiple north-south trending embayments. The ground surface is generally characterized by a thick accumulation of Quaternary age sediment of glacial and alluvial origin. The shallowest naturally deposited sediments in this area are interlayered units of riverine, terrace, lacustrine, and fan deposits on top of recessional Pleistocene glacial deposits.

The Site sits atop the South Tacoma Channel, which has been interpreted as a historical drainage pathway for glacial meltwaters to Commencement Bay. The current wetland drainage and remains of the swamp/lakebed in the southwestern portion of the Site are remnants of this drainage feature.

Soil at the Site, down to the maximum depth of exploration, are generally a mixture of well- to poorly-sorted sands and gravels with some silts. These soils are generally well drained. The surface of the Site contains a thin layer of topsoil and sandy loam.

4.3 Subsurface Utilities

The periphery of the Site is served by multiple subsurface utilities. Only one utility of concern appears to be present in the interior of the Site. A 24-inch-diameter main sanitary sewer side-sewer (SS) trunk line traverses the Site north to south.

All utilities in the area of the planned work will be clearly located in the field prior to advancing soil sampling equipment. TRC will utilize private and public utility locate requests to ensure there are no utilities in the areas of investigation prior to coring.

5.0 CONTAMINANTS OF CONCERN

Metals impacts are generally concentrated in the upper 5 feet of native soils and where remedial work was performed and capped in-place. Figure 2 shows the extent of soil contamination and the various cells where the contaminated soil has been left in place and restricted, accordingly.

Analytical data from previous investigations at the Site indicate the presence of the following contaminants of concern (COCs) within the indicated media:

- **Soil:** The following compounds were identified at the Site at concentrations exceeding the action levels in the ROD:
 - Arsenic
 - Copper
 - Lead

- Zinc
- cPAHs
- PCBs

These soils are currently protected from exposures to human health and the environment through institutional controls.

An area of petroleum impacts to soil was located in the interior of the Site in association with an underground storage tank (UST) that was discovered and removed during the remedial action. The impacts associated with that UST are being addressed by Burlington Northern Santa Fe (BNSF) under the oversight of the Washington State Department of Ecology (Ecology).

- **Groundwater:** The following compounds have been historically detected in Site groundwater:
 - Limited volatile organic compounds (VOCs)

Impacts to groundwater are not present on any portion of the Site that may be acquired by Bridge. Limited impacts to groundwater have been noted at the Pioneer Builders Site and a small amount of immiscible petroleum was noted on groundwater on the Amsted Property. Both properties are excluded from the potential purchase by Bridge.

6.0 SOIL SAMPLING AND ANALYSIS

A Site-specific Site Health and Safety Plan (HASP) is provided in Attachment A. The HASP provides a description of known and potential hazards for on-Site team members, actions levels, mitigation measures, necessary personal protective equipment (PPE), and emergency contact information along with a route to emergency medical care.

Development plans will include procedures to minimize the soil disturbance in the area of known impacted soil, but adjustments to grade will be inevitable, as will be the need to install structural footings and interior building foundations. The proposed soil sampling is intended to generally characterize those soils that may be encountered during redevelopment. Because lead is the primary regulatory driver for the Site, and the primary determinant for soil placement in the containment area, the chemical analyses will focus on lead, with some focused analyses for arsenic, cPAHs, and PCBs.

The following sections provide a description of the major elements of the investigative tasks that will be performed.

6.1 Soil Sampling Locations and Depths

A total of six borings will be advanced in the locations indicated on Figure 3. TRC will collect soil samples from two separate depths from within the former BNSF dismantling yard, where metals-impacted soils will require specialized handling and increased health and safety protocols during redevelopment.

Sampling locations will be identified in the field based on latitude and longitude using GPS with a resolution of approximately 9 feet (Figure 3). Locations will ultimately be mapped in Geographic Information System (GIS) format.

The planned borings will be designated STF-BNDY-1 through STF-BNDY-6 to designate the sample locations within the former BN Dismantling Yard. All borings will be advanced using manual techniques such as a post-hole digger and/or hand auger to provide a continuous core. Soil borings will generally extend to a depth of not more than 5 feet below grade and may be shallower, depending upon the conditions encountered by the field team.

Field technicians will limit soil disturbances to minimize the potential for wind-blown particulate exposure.

Two soil samples will be collected from each location for a total of 12 soil samples. Depending upon field conditions, a soil sample will be retained from the 1-to-2-foot depth interval and the 4-to-5-foot interval. At each location, soil from the target interval will be placed in a stainless-steel bowl and homogenized using a stainless-steel or disposable spoon. Gravel larger than 3/8-inch will be discarded. Aliquots of the homogenized sample will be placed in two 8-ounce glass jars provided by the analytical laboratory. All sampling equipment will be either disposed or decontaminated between sampling locations. Two duplicate samples will be collected to assess laboratory consistency.

The soil conditions encountered will be logged using the Unified Soil Classification System with visual and manual procedures provided in ASTM 2488D and will be presented on field boring logs.

The soil from the exploratory borings will be returned to the bore holes and compacted smooth with a hand-tamper.

6.2 Sample Handling and Analysis

Samples will be immediately labeled and placed in an iced cooler pending delivery to the analytical laboratory. All samples will be handled and transported under standard chain-of-custody procedures.

Each sample (12 total) will be submitted for of the following analyses:

- Total lead using EPA Method 3050; and
- Toxicity Characteristic Leaching Procedure (TCLP) extraction under EPA Method 1311 and subsequent analysis of the extract for lead using EPA Method 3050.

50 percent (six samples) will be submitted for analysis of arsenic and copper using EPA Method 200.8, cPAHs using EPA Method 8270, and PCBs using EPA Method 8082A.

Samples will be submitted to Freidman & Bruya in Seattle, Washington, for analysis. Samples not initially submitted for analysis will be archived for potential follow-up analysis, as appropriate. Samples will be analyzed within the normal holding times for those analyses.

The analytical laboratory is accredited by Ecology to perform each of the listed analyses. The laboratory will also perform standard internal Quality Assurance/Quality Control (QA/QC), such as laboratory blank analyses, matrix spike, and matrix spike duplicates for each sample delivery group. The data will be provided in both hardcopy and electronic data deliverable. TRC does not anticipate external data validation or Contract Lab Protocol (CLP) data deliverable packages.

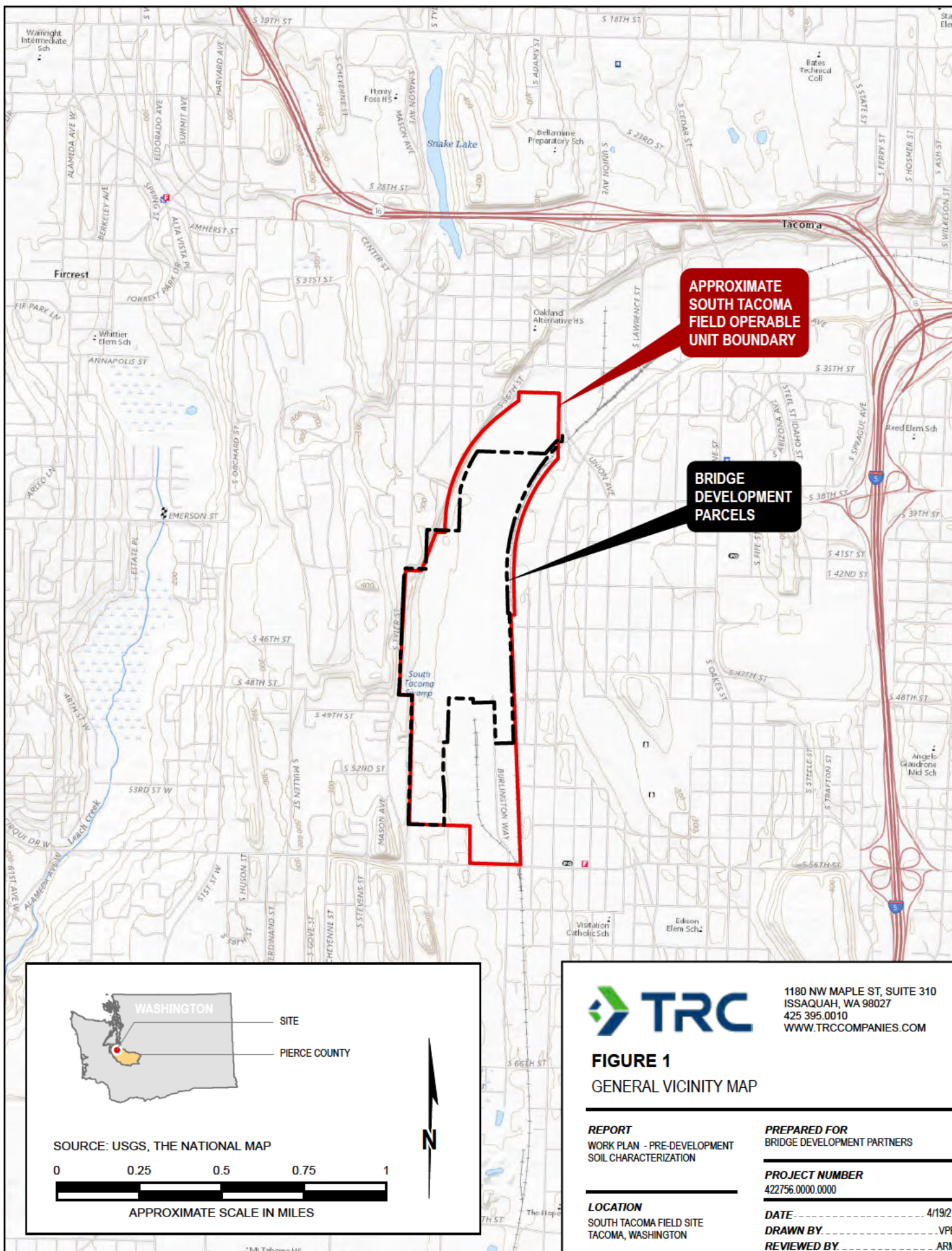
7.0 REPORTING

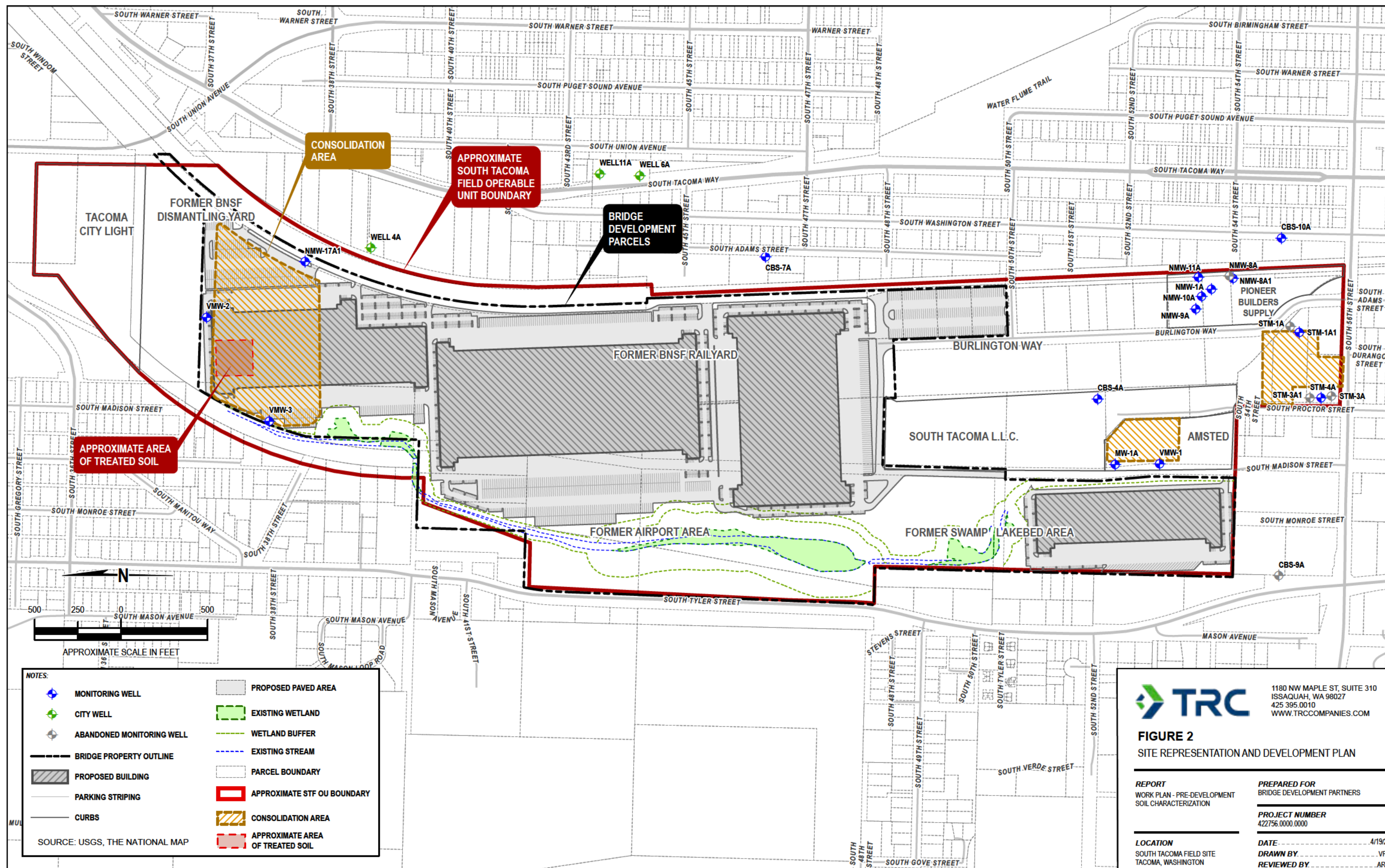
Following receipt of all final laboratory data, TRC will prepare a brief technical memorandum documenting the work performed, the findings of the work, and the conclusions supported by those findings. The technical memorandum will include a summary table of analytical results and comparison of those results to pertinent regulatory criteria. After review and consideration by Bridge, the technical memorandum will be provided to EPA.

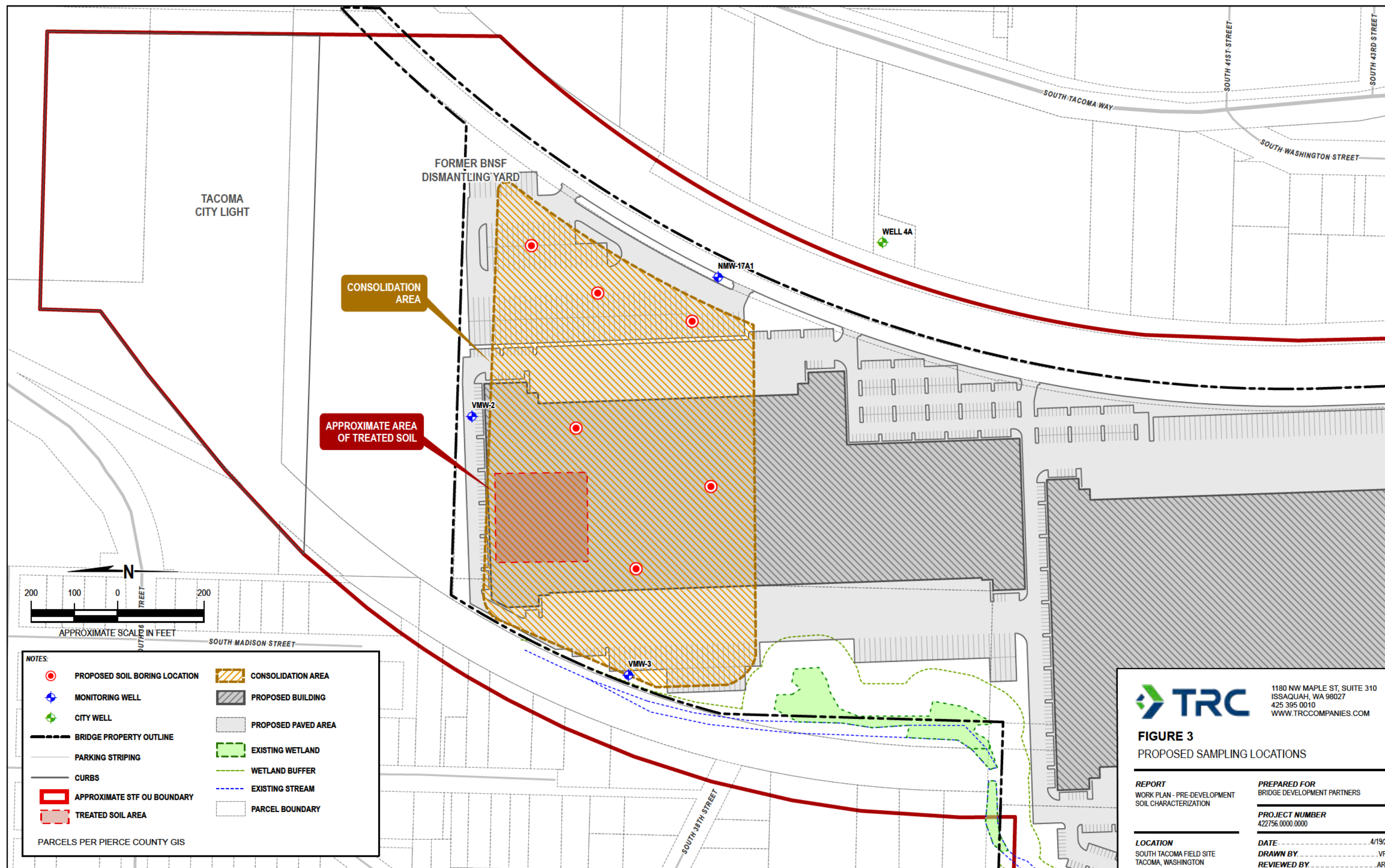
8.0 SCHEDULE

The soil investigation is currently set for early May 2021. It is anticipated that sampling will require about 2 days to complete. Assuming TRC receives the laboratory analytical results within standard laboratory turnaround time, the technical memorandum will be available for review by Bridge by late May. After review and consideration of the document by Bridge, the technical memorandum and data will be provided to EPA. Unless notified otherwise by EPA, field work will begin within about 2 weeks of the date of this Work Plan.

Figures







Attachment A
Health and Safety Plan



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Health and Safety Plan

Site Name:	South Tacoma Field Site	
Site Address:	47.213690°, -122.487915°	
TRC Project Number:	422756.0000.0000	
Client:	Bridge Development/Matt Gladney	Phone: 425.505.5173
Site Contact:	Matt Gladney	Phone: 425-505-5173
Client Health and Safety Representative:	Matt Gladney	Phone: 425-505-5173
TRC WorkCare		Phone: 888-449-7787

Planned Activities: Hazardous materials investigation – hand tools for shallow subsurface investigation.	Location Within Site: Site wide	Dates: TBD
Estimation of Hazards to TRC Personnel: Soils in some areas of the site contain concentrations of metals (arsenic, copper, lead, zinc), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and polychlorinated biphenyls (PCBs) at concentrations that could be harmful to human health if accidentally contacted or ingested. Groundwater at the Pioneer Builders Supply Property contains concentrations of volatile organic compounds (VOCs) at concentrations that could be harmful to human health under certain exposure scenarios.		
Physical Description of the Facility: Former railyard. Level to mild slope.		
Operation Description of the Facility: Currently brownfield, planned development into industrial cold storage facility		
Facility Status: The majority of the site is not active industrial, with industrial and commercial usage is confined to the south end of the site.		

Hazard Assessment			
Chemical State:	<input type="checkbox"/> Liquid	<input checked="" type="checkbox"/> Solid	<input type="checkbox"/> Gas
	<input type="checkbox"/> Vapor	<input type="checkbox"/> Unknown	
Chemical Characteristics:	<input type="checkbox"/> Corrosive	<input type="checkbox"/> Flammable	<input checked="" type="checkbox"/> Toxic
	<input type="checkbox"/> Volatile	<input type="checkbox"/> Inert	<input type="checkbox"/> Other:

Describe Potential Chemical Hazards and Modes of Exposure	
Chemical Hazards:	Hazards include arsenic, copper, lead, zinc, PCBs, and cPAHs in soils.
Potential Modes of Exposure:	Contact: VOCs, arsenic Ingestion: PCBs, arsenic, copper, lead, zinc

Potential Chemical Hazards						
Chemical Name	Action Levels			Exposure Route	Target Organs	Symptoms
	PEL	STEL	IDLH			
Petroleum-Related Chemicals						
Benzene	1 ppm	5 ppm	500 ppm	Inhalation; ingestion; skin/eye contact	Blood, central nervous system; skin; bone marrow; eyes; respiratory system	Irritation of eyes, nose, respiratory; giddiness; headache; nausea; staggered gait; fatigue; anorexia; lassitude; dermatitis; bone marrow; depression
Ethyl benzene	100 ppm	125 ppm	800 ppm	Inhalation; ingestion; skin/eye contact	Eyes; upper respiratory system; skin; central nervous system	Irritation of eyes, mucous membrane; headache; dermatitis; narcosis; coma
Toluene	100 ppm	150 ppm	500 ppm	Inhalation, absorption, ingestion, skin/eye contact	Central nervous system; liver; kidneys; skin	Fatigue; confusion, euphoria, dizziness, headache; dilated pupils; lacrimation; nervousness; insomnia; paresthesia; dermatitis
Xylene	100 ppm	150 ppm	900 ppm	Inhalation; ingestion; absorption; skin/eye contact	Central nervous system; GI tract; blood; liver; kidneys; skin	Dizziness, excitement, drowsiness, incoordination, staggered gait; irritation of eyes, nose, throat; corneal vacuolization; anorexia; nausea; vomiting, abdominal pain; dermatitis
MTCA 5 Metals						
Arsenic	0.002 mg/m³	0.010 mg/m³	5 mg/m³	Inhalation, skin absorption, skin/eye contact, ingestion	Liver, kidneys, skin, lungs, lymphatic system	Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin [potential occupational carcinogen]
Lead	0.050 mg/m³		100 mg/m³	Inhalation, ingestion, skin/eye contact	Eyes, gastrointestina l tract, CNS, kidneys, blood, gingival tissue	Weakness, exhaustion, insomnia, facial pallor, anorexia, weight loss, malnutrition, constipation, abdominal pain, colic, anemia, gingival lead line, tremor, paralysis, wrist, ankles, encephalopathy, kidney disease, irritation eyes, hypertension

Describe Potential Physical Worker Hazards:

Hand tools, traffic, slip, trip, and fall, vehicular traffic, noise, overhead hazards.

Potential Physical Hazards

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Heat Stress | <input checked="" type="checkbox"/> Cold Stress | <input type="checkbox"/> Explosion/Flammability |
| <input checked="" type="checkbox"/> Noise | <input type="checkbox"/> Confined-Space Entry | <input type="checkbox"/> Oxygen-Deficient Atmosphere |
| <input checked="" type="checkbox"/> Traffic or heavy equipment | <input type="checkbox"/> Heights | <input checked="" type="checkbox"/> Slip, trip, fall |
| <input type="checkbox"/> Overhead hazards | <input checked="" type="checkbox"/> Dust (non-toxic), lead, cPAHs | <input checked="" type="checkbox"/> Other: COVID-19 (see attachments) |

Prevention of Physical Hazards

Category	Cause	Preventive Measures
Head Hazards	Falling and/or sharp objects, bumping hazards.	Hard hats will be worn by all personnel at all times when working around overhead hazards and heavy equipment.
Foot/Ankle Hazards	Sharp objects, dropped objects, uneven and/or slippery surfaces, and chemical exposure.	Chemical resistant, steel-toed boots must be worn at all times on-site.
Eye Hazards	Dust, Sharp objects, poor lighting, exposure due to splashes.	Safety glasses/face shields will be worn when appropriate, and when handling samples and when dust is in the air.
Electrical Hazards	Underground utilities, overhead utilities, motors, electrical panels equip. and breakers.	Locator service mark-outs, visual inspection of work area prior to starting work.
Mechanical Hazards	Heavy equipment such as drill rigs, service trucks, excavation equipment, saws, drills, etc.	Competent operators, backup alarms, regular maintenance, daily mechanical checks, proper guards.
Noise Hazards	Machinery creating >85 decibels TWA, >115 decibels continuous noise, or peak at >140 decibels.	Wear earplugs or protective earmuffs.
Fall Hazards	Elevated and/or slippery or uneven surfaces. Trips caused by poor "housekeeping" practices.	Care should be used to avoid such accidents and to maintain good "housekeeping". Fall protection devices must be used when work proceeds on elevated surfaces.
Lifting Hazards	Injury due to improper lifting techniques, overreaching/overextending, heavy objects.	Use proper lifting techniques, mechanical devices where appropriate.
Lighting Hazards	Improper illumination.	Limit work to daylight hours or rent additional construction lighting.

Site Activity Considerations			
Will Client Site Representative be Present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Sometimes
Exact Locations of Chemicals:	<input type="checkbox"/> Known	<input checked="" type="checkbox"/> Assumed	<input type="checkbox"/> Unknown
Identify Nearest Off-Site Population: Site is surrounded by active commercial, light industrial, and residential properties within 0.5 miles.	<input type="checkbox"/> Rural <input checked="" type="checkbox"/> Urban	<input checked="" type="checkbox"/> Industrial <input checked="" type="checkbox"/> Commercial	<input checked="" type="checkbox"/> Residential

Monitoring Equipment		
<input checked="" type="checkbox"/> PID	<input type="checkbox"/> FID	<input type="checkbox"/> Combustible gas indicator
<input type="checkbox"/> Colorimetric tubes	<input type="checkbox"/> Particulate meter	<input type="checkbox"/> Carbon monoxide meter
<input type="checkbox"/> H ₂ S/O ₂ Meter	<input type="checkbox"/> Other (describe):	

Monitoring Action Guidelines		
Instrument	Reading	Action Required
PID (Note: All measurements taken within the breathing space of site workers.)	>1 but <5 ppm	Wait 15 minutes and measure again. Level is based on Short-Term Exposure Limit (15-min TWA) for benzene.
	>1 but <5 ppm for >15 minutes	Upgrade to Level C (full- or half-face respirator) protection with combination HEPA/organic vapor cartridges.
	>500 ppm for benzene	Evacuate all workers from work area. Notify Project Manager and Company Safety Officer. If permitted, retest atmosphere while wearing full- or half-face respirator with combination HEPA/organic vapor cartridges.

Special Safety Considerations	
Any work within 25 feet of the nearest rail on BNSF owned track will require coordination with BNSF well in advance of the work being performed.	
Work Location:	Within 25 feet of track.
Objective of work at this Location:	Soil sampling.
Level of Protection Planned:	<input checked="" type="checkbox"/> Level C <input type="checkbox"/> Level D <input type="checkbox"/> Level D-Modified (explain below)
Modifications to Level of Protection: Safety glasses, steel toe boots, and hearing protection required when working near heavy equipment. DOT-approved high visibility safety vest required when working near vehicle traffic, heavy equipment, or rail lines. Respirators with HEPA filter protection will be required when exposed to particulates or dust during sampling.	

Types of PPE to be Used	
Foot	Steel-toed, steel shank boots. Rubber steel toed boots or rubber boot covers required if boot decontamination is warranted.
Hand	Double layer of nitrile gloves when handling potentially contaminated media, temperature-appropriate gloves for protection during cold weather.
Eye/Face	Safety glasses, COVID-19 appropriate face mask
Clothing	Temperature appropriate, long pants are required. Tyvek coveralls should be available to all on-site workers.
Respiratory	Full- or half-face respirator will be worn when exposed to dust or particulates.
Additional Gear	Earplugs, face mask, DOT-approved high visibility safety vest.

Work Party		
Name	Responsibility	Level of Protection

Site Entry Procedure

Upon site arrival but before walking onto the property, send an email with the following information to the Project Manager and to onsite-iss@trccompanies.com:

- Property address
- Who is with you at the job site (TRC employee, client, or subcontractor)
- Description and license number of the vehicle you are using
- What time you anticipate leaving the property

When leaving the site for the day, send another email to the Project Manager and onsite-iss@trccompanies.com stating that you are off-site. The email can be as simple as: "It's 5:00pm and I'm leaving the property."

Criteria for Changing Personal Protection

Upgrade respirator if fit test fails. Respirators will be required when exposed to dust or particulates. Potential for dermal contact with contaminated materials: when sampling double glove, when around possible airborne dust contact wear long sleeves or Tyvek suit, N95 respirator or fitted respirator.

Criteria for Implementing Engineering Controls:

No engineering controls available.

Decontamination Procedures

Remove PPE and wash hands and face with soap and potable water prior to eating or leaving Site. If covered in dust from site change clothes or remove any outerwear to avoid contaminating vehicle. Eye wash kit, first aid kit, and fire extinguisher available in TRC vehicle(s).

Work Limitations (i.e., time of day, conditions, etc.)

Daylight hours only.

Placement of Disposable Materials

Non-contaminated materials will be placed in dumpster on-site. Contaminated materials will be placed back into the bore-holes and will be compacted.

Placement of Investigation-Derived Residuals (i.e., drilling spoils, decon. water, purge/dev. water)

Liquid and solids will be disposed in accordance with local, state, and federal regulations.

Location of Nearest:

Cellular Phone: With TRC field representative

Running Water: TBD

Public Road: Burlington Way

Lavatory: TBD

Emergency Planning		
Service	Name	Number
Local Police:	Tacoma Police Department	911
Local EMS:	Tacoma Fire Department	911
Local Fire Department:	Tacoma Fire Department	911
Local Hospital:	Multicare Allenmore Hospital Emergency Department	253-459-6400
Client Contact:	Matt Gladney	424-505-5173
Site Phone Number:	TRC personnel	TBD
WorkCare		888-449-7787
TRC Office Safety Coordinator	Douglas Kunkel	425-395-0016 office (b) (6) cell

Directions to Nearest Medical Facility (Map Attached):

MultiCare Allenmore Hospital, 1901 S Union Ave, Tacoma, WA 98405

Take S 50th St to S Washington St, TURN LEFT
 Take S Washington St to S Tacoma Way TURN LEFT
 Take S Tacoma Way to S Pine St, TURN LEFT
 S Pine St becomes S Cedar St, continue NORTH.
 Take S Cedar St to S 19th St, TURN LEFT
 Take S 19th St to S Lawrence St, TURN LEFT
 DESTINATION WILL BE ON THE RIGHT

MultiCare Allenmore Hospital Emergency Department
1901 S Union Ave, Tacoma, WA 98405

Approvals		
Title	Signature	Date
Site Safety Officer, TBD		
Project Manager, Adam Morine		
TRC Office Safety Coordinator, Doug Kunkel		

Additional Site Personnel		
Printed Name and Company	Approvals Signature	Date



1180 NW Maple St., Suite 310
Issaquah, WA 98027

T 425.395.0010
TRCcompanies.com

Daily Safety Meeting

Date:	
TRC Project Number:	
Site Address:	
TRC Personnel Conducting Meeting:	

Known or Suspected Potential Hazards	Personal Protective Equipment
<input type="checkbox"/> Chemicals of Potential Concern <input type="checkbox"/> Traffic (Vehicle and Pedestrian) <input type="checkbox"/> Trips <input type="checkbox"/> Falls <input type="checkbox"/> Drilling Equipment <input type="checkbox"/> Excavation Equipment <input type="checkbox"/> Noise <input type="checkbox"/> Hot/Cold <input type="checkbox"/> Utilities, Subsurface, and Overhead <input type="checkbox"/> Other, Describe:	<input type="checkbox"/> Hard Hat <input type="checkbox"/> Eye Protection <input type="checkbox"/> High-Visibility Clothing <input type="checkbox"/> Flame-Resistant Clothing <input type="checkbox"/> Protective Footwear <input type="checkbox"/> Coveralls <input type="checkbox"/> Hearing Protection <input type="checkbox"/> Respirator <input type="checkbox"/> Exclusion Zone (Cones, Signs, Etc.) <input type="checkbox"/> Other, Describe: COVID-19 procedures
Locations of Emergency Equipment	Decon, Emergency Signals, Rally Point, Etc.
<input type="checkbox"/> Fire Extinguishers <input type="checkbox"/> Eye Wash <input type="checkbox"/> First Aid Kit <input type="checkbox"/> Nearest Medical Facility <input type="checkbox"/> Potable Water <input type="checkbox"/> Restroom <input type="checkbox"/> Equipment Shutdown Procedures <input type="checkbox"/> Other, Describe:	<input type="checkbox"/> Decon Procedures <input type="checkbox"/> Waste Management <input type="checkbox"/> Hand Signals for Shutdown <input type="checkbox"/> Audible Signals for Shutdown <input type="checkbox"/> Primary Rally Point <input type="checkbox"/> Secondary Rally Point <input type="checkbox"/> Other Emergency Info, Describe:

Persons Attending Safety Meeting

[illegible]